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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,254	09/25/2001	Koichi Otsuki	214037US2	7290

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EXAMINER	
MILIA, MARK R	
ART UNIT	**PAPER NUMBER**
2625	

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/961,254	OTSUKI, KOICHI	
	Examiner	Art Unit	
	Mark R. Milia	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment was received on 10/31/06 and has been entered and made of record. Currently, claims 1-28 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 8, 9, 15, 22, and 23 have been considered but are moot in view of the current amendment to claims 1, 8, 15, and 22, therefore a new ground(s) of rejection will be made.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 8, 9, 15, 22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Imai (US 5852452).

Regarding claims 1 and 15, Imai discloses a printing device and method for printing an image on a printing medium, comprising a feed mechanism comprising a traction roller which advances a printing medium by gripping the printing medium, wherein the feed mechanism is configured to advance and stop the printing medium intermittently (see column 3 lines 36-38 and column 3 line 66-column 4 line 4), wherein the feed mechanism is adjusted so that an average feed error δave is in the vicinity of zero with respect to a most slippery printing medium among plural types of printing media designed to be used in the printing device (see column 8 line 40-column 9 line 5).

Regarding claims 8 and 22, Imai discloses a printing device for printing an image on a printing medium, comprising: a feed mechanism comprising a traction roller which advances a printing medium by gripping the printing medium, wherein the feed mechanism is configured to advance and stop the printing medium intermittently (see column 3 lines 36-38 and column 3 line 66-column 4 line 4), and a controller configured to supply a feed command to the feed mechanism to control the advance of the printing medium by the feed mechanism, wherein the controller is configure to correct a feed amount such that an average feed error δave is in the vicinity of zero with respect to a printing medium among plural types of printing media designed to be used in the printing device, and to supply the feed command representing the corrected feed amount to the feed mechanism (see column 4 lines 7-30 and 37-42, column 7 lines 27-50, and column 8 line 40-column 9 line 5).

Regarding claims 9 and 23, Imai further discloses wherein the specific printing medium includes a most slippery printing medium among the plural types of printing media (see column 8 line 47-column 9 line 5).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 2-7, 10-14, 16-21, and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai as applied to claims 1, 8, 15, and 22 above, and further in view of Japanese Patent Document No. 10-337863 to Sumiya et al. Reference will be made to the computer translation, which was provided with the previous Office Action.

Regarding claims 2, 12, 16, and 26, Imai does not disclose expressly a print head configured to discharge ink to form dots on the printing medium, wherein the print head has N nozzles arranged in a feed direction of the printing medium by a pitch k · D for discharging ink of same color, where k is an integer of 1 or greater, D is a smallest dot pitch in the feed direction, and N is an integer of 2 or greater, and wherein the average feed error δave regarding the most slippery printing medium is an average error when the feeding has been performed by a feed amount of N x (k · D) or smaller.

Sumiya discloses a print head configured to discharge ink to form dots on the printing medium, wherein the print head has N nozzles arranged in a feed direction of the printing medium by a pitch k · D for discharging ink of same color, where k is an

integer of 1 or greater, D is a smallest dot pitch in the feed direction, and N is an integer of 2 or greater, and wherein the average feed error δave regarding the most slippery printing medium is an average error when the feeding has been performed by a feed amount of N x (k · D) or smaller (see Drawing 42 and paragraphs 3-7).

Imai & Sumiya are combinable because they are from the same field of endeavor, regulating feed amount to record high quality images.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the printing of dots according to the feeding amount, as described by Sumiya, with the system Imai.

The suggestion/motivation for doing so would have been to maintain clear, high quality images by adjusting the paper feed mechanism according to the type of recording medium.

Therefore, it would have been obvious to combine Sumiya with Imai to obtain the invention as specified in claims 2, 12, 16, and 26.

Regarding claims 3, 13, 17, and 27, Imai further discloses wherein the average feed error δave regarding the most slippery printing medium is within a range of about -0.5D to about +0.5D (see column 8 line 47-column 9 line 5, reference states that no variation in paper feeding is produced which would be equivalent to a feed error of zero, which falls in the range of –0.5D to +0.5D).

Regarding claims 4 and 18, Imai further discloses wherein the average feed error δave is within a range of about -0.5D to about +0.5D with respect to all of the plural

types of the printing media designed to be used in the printing device (see column 8 line 47-column 9 line 5, reference states that no variation in paper feeding is produced which would be equivalent to a feed error of zero, which falls in the range of –0.5D to +0.5D).

Regarding claims 5, 14, 19, and 28, Sumiya further discloses wherein the integer k is 2 or greater, and wherein a value of (k-1) · δave obtained by multiplying the average feed error δave regarding the most slippery printing medium by (k-1) is within a range of about -0.5D to about +0.5D (see paragraphs 3-7).

Regarding claims 6 and 20, Imai further discloses wherein the average feed error δave is of positive value with respect to printing medium other than the most slippery printing medium among the plural types of printing media designed to be used in the printing device (see column 8 line 47-column 9 line 5, reference states that the feed error would be substantially zero as it states no variation is produced, however, it is obvious that the average feed error would be a positive value with respect to printing medium other than the most slippery, thus slightly over zero because no system is perfect and thus a slight error would be produced).

Regarding claims 7 and 21, Imai further discloses wherein the average feed error δave regarding the most slippery printing media is of negative value (see column 8 line 47-column 9 line 5, reference states that the feed error would be substantially zero as it states no variation is produced, however, it is obvious that the average feed error would be negative for the most slippery printing medium, thus slightly below zero because no system is perfect and thus a slight error would be produced).

Regarding claims 10 and 24, Sumiya further discloses wherein the specific printing medium includes roll paper (see Drawing 2 and paragraphs 35-36, roll paper/continuous feed paper has been used in the art for many years).

Regarding claims 11 and 25, Sumiya further discloses wherein the controller is configured to determine the correct feed value based on feed amount data and feed correction data included in printing data supplied from another device external to the printing device (see Drawing 1).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark R. Milia whose telephone number is (571) 272-7408. The examiner can normally be reached M-F 8:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler M. Lamb can be reached at (571) 272-7406. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark R. Milia
Examiner
Art Unit 2625

MRM

KING Y. POON
PRIMARY EXAMINER